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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,512	11/05/2003	Pushpito Kumar Ghosh	3095-009	5938

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LOWE HAUPTMAN GILMAN & BERNER, LLP  
Suite 300  
1700 Diagonal Road  
Alexandria, VA 22314

EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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03/19/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/700,512

**Applicant(s)**

GHOSH ET AL.

**Examiner**

Krishnan S. Menon

**Art Unit**

1797

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 43-54 and 56-73 is/are pending in the application.  
4a) Of the above claim(s) 56-71 and 73 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 43-54 and 72 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB06)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 43-54 and 56-73 are pending as amended in the RCE of 2/12/08, of which 56-71 and 73 are withdrawn from consideration as non-elected invention.

### ***Specification/Drawings***

The amendment filed 8/14/06 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the drawing figure 7 and the corresponding brief description of the drawing are objected to as new matter, because there is no disclosure in the specification or claims for them as originally filed.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 43-54 and 72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 43:

(1) 'the filter container' in the first line, step (c), has no antecedent basis.

(2) Membrane module thickness between 130-170 microns: this is assumed as membrane thickness.

(3) The six solenoid valves and the back-pressure regulator are not properly linked to the system.

(4) The parts listed in (d) and further are not structurally linked to the system.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 43-54 and 72 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In the limitation: "

microns, [[and]] wherein said module comprises a spiral thin film composite membrane allowing water to pass while retaining other components, and the solution to circulate in the system device [(:)] and ",

it is unclear how the membrane would allow the solution to recirculate in the device.

Such recirculation would require structure in the system that has nothing to do with the thin film composite membrane used.

Claims 43-54 and 72 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The structural relationship between the six

solenoid valves and the rest of the system are critical or essential to the practice of the invention because the amended claims and applicant's arguments stress the importance of the six solenoid valves for patentability over the cited prior arts, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The disclosure as originally filed does not have any details of how the solenoid valves are structurally linked to the system.

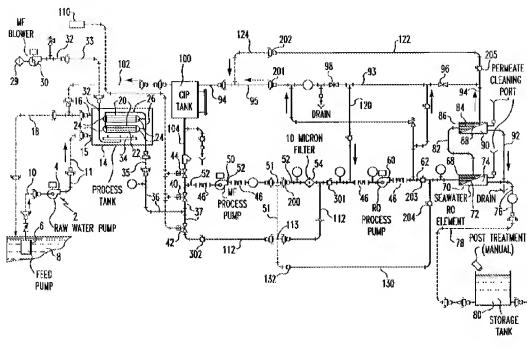
The limitation "and the solution to recirculates in the device" does not have enabling disclosure even in the newly submitted flow diagram (figure 7) on 8/14/06.

#### ***Claim Rejections - 35 USC § 102/103***

1. Claims 43-54 and 72 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Daly et al (US 6,120,688).

Daly teaches a reverse osmosis system with prefilter (20), reverse osmosis membranes (70,84), process tank, pumps, several solenoid valves, recirculation of the retentate water (through lines 93-93-120), back pressure regulator (see drain line or the recirculation line to the CIP tank: reverse osmosis systems require a back-pressure regulator to maintain the high pressure over the membrane for the separation to happen, and it is implied in the system if not explicitly stated). See the figure reproduced below.

The limitations of "for concentrating aqueous solutions", or any reference to the herbal concentrate are only intended use, and are not patentable limitations in an apparatus claim.



U.S. Patent

Sep. 19, 2000

6,120,688

2. Claims 43-54 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-201872 or Lawhon et al (US 4,643,902) with evidence from Gobel et al (US 4,491,600) and/or Dorai et al (US 5,434,315)

Claims 43-55 and 72 recite a reverse osmosis system with a thin film composite membrane module, a prefilter, associated pumps and piping, valves, control valves and instrumentation to run the system; with the recycle of the concentrate from the membrane to the extract solution container. The system is intended for use in concentrating herbal extracts.

JP teaches a system for concentrating herbal extracts using reverse osmosis membranes, with prefilter and associated pumps, valves, etc. JP teaches using reverse osmosis for concentrating the extract especially for extracts which have volatile components. Types of membranes including TFC are also taught. See pages 5 and 6 of the reference (of the English machine-translation). It is unclear if the reference specifically teaches recirculating the extract through the reverse osmosis system. However, the reference clearly states at several places that the reverse osmosis concentration is well known.

Lawhon teaches using ultrafiltration and reverse osmosis membranes for concentrating various fruit and vegetable extracts as claimed in figures 1-3. The pre-filtration step to remove suspended matter is seen in column 4 lines 5-10. The ultrafiltration step provides UF concentrate, and permeate; the permeate containing flavor and aroma components, which is concentrated by reverse osmosis, and the reverse osmosis permeate being just solvent (or water) being discarded. Additional equipment such as tanks, solenoid valves, power supply, control panels, regulators, rubber O-ring seals, etc., are inherent in the teaching of the reference. The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983). The

membranes taught are hollow fiber and tubular (for RO: examples). Spiral wound membranes are also tubular. Moreover, the specific membrane structure such as spiral, hollow fiber, or plate type are considered equivalents, as evidenced by the Gobel reference, column 3 lines 55-60 and column 4 lines 5-21.

Lawhon also does not specifically teach recirculating the concentrate for further concentration. Gobel teaches that recirculation can be done if desired (column 4 lines 60-68, and column 5, lines 32-49). Dorai teaches making multiple passes of the polymer liquids through a separation membrane (20), that is recirculating, to concentrate. Daly also teaches retentate recirculation (see rejection paragraph 1 above). Thus recirculating solutions through the membrane system is also well known. It would also be obvious to one of ordinary skill in the art at the time of invention to recirculate a stream if one pass is insufficient to obtain the desired concentration; and also for a batch operation.

The systems taught by the references are particularly effective in concentrating herbal extracts, functioning at room temperature, without frothing, enabling removal suspended mater, valves changing to help, enables adequate pressure, on-off switch helps, control functions, etc., are functional language and are not patentable limitations. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because



Art Unit: 1797

the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device is, not what a device does.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). Ability to scale up is not patentable. Dimensional details of the membrane etc., are not patentable limitations: *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.). The membrane used by the applicant are also known in the prior art, as admitted by the applicant in the specification, and therefore has no patentable weight.

### ***Response to Arguments***

Applicant's arguments filed 2/12/08 have been fully considered but they are not persuasive.

Applicant's amendments have not overcome all the 35 USC 112 issues. With respect to the six solenoid valves, use of solenoid valves in process lines is well known. According to the figure 7 (which is considered as new matter), Applicant's six solenoid valves are used one each in the inlet to the pump (6) (#8), outlet to the concentrate of the membrane and upstream of the pressure regulator (14) (#9), an airline connection (#10), a bypass to the regulator (#11), a water connection (#12), and before the drain (#13). None of these can be considered as inventive.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 1797

/Krishnan S Menon/

Primary Examiner, Art Unit 1797